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(54) Method of manufacturing paper making screen plate and paper making screen plate

Verfahren zur Herstellung eines Siebes für die Papierherstellung und Sieb für die Papierherstellung

Méthode de fabrication d'une plaque de tamis pour la fabrication du papier et plaque de tamis pour la fabrication du papier

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Description**BACKGROUND OF THE INVENTION****1. Field of the invention**

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[0001] The present invention relates to a method of manufacturing a paper making screen plate and the paper making screen plate, and more specifically, to a method of manufacturing a paper making screen plate by which the screen plate can be easily manufactured and the paper making screen plate.

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2. Description of the prior art

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[0002] The applicant discloses a method of manufacturing a paper making screen plate by forming slits by locating bar-shaped members near to each other in Japanese Patent Publication Laid-Open No. 6 (1994)-299490.

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[0003] The paper making screen plate disclosed in the publication includes bar-shaped members having a circular cross section, a first support member having receiving portions for the bar-shaped members which are annularly formed thereto at intervals and a second support member having receiving portions for the bar-shaped members which are annularly formed thereto at intervals, the bar-shaped members are annularly disposed near to each other as well as the ends on one side of the bar-shaped members are abutted against the receiving portions of the first support member and the ends on the other side of the bar-shaped members are abutted against the receiving portions of the second support member, respectively, and the abutted portions are fixed by welding or the like.

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[0004] Since the receiving portions of the first and second support members are arranged as a plurality (for example, about 250 pieces - about 300 pieces) of circular holes formed thereto, although the holes must be formed to the first support member and the second support member at predetermined intervals (for example, about 0.05 mm - about 0.5 mm by which the slits of the screen plate can be formed), there is a problem that a job for forming the holes is very time-consuming and workability of the job is not good.

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[0005] In particular, when the bar-shaped members have a small diameter, although the first support member must be accurately aligned with the second support member as well as the degree of parallelism of the adjacent bar-shaped members must be accurately adjusted, there arise problems in that these requirements cannot be easily and promptly satisfied and further when the adjacent holes are located near to each other, it is difficult to form the holes (receiving portions) from the view point of strength.

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[0006] From FR 2 612 081 A1 a method according to the preamble of claim 1 is known. The longitudinal members used herein have a T-shaped cross-section and

must be mounted via special supporting structures including notches.

SUMMARY OF THE INVENTION

[0007] An object of the present invention is to provide a method of manufacturing a paper making screen plate and the paper making screen plate by which the aforesaid conventional problems can be removed.

[0008] An object of the present invention is to provide a method of manufacturing a paper making screen plate capable of accurately and easily forming slits having a predetermined size between longitudinal members and thus obtaining a screen plate which can be easily manufactured,

[0009] This object is attained by a method according to claim 1.

[0010] The subclaims defined advantageous embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011]

FIG. 1 to FIG. 7 are drawings explaining a method of manufacturing a paper making screen plate of an embodiment of the present invention, wherein;

FIG. 1 is a schematic cross sectional view of a screen having a screen plate manufactured by the method of manufacturing the paper making screen plate of the embodiment of the present invention;

FIG. 2 is a schematic cross sectional view showing the screen plate of FIG. 1 in enlargement;

FIG. 3 is a schematic cross sectional view taken along the line A - A of FIG. 2;

FIG. 4 is a view schematically explaining the method of manufacturing the paper making screen plate;

FIG. 5 is a view schematically explaining the method of manufacturing the paper making screen plate;

FIG. 6 is a view schematically explaining the state that a plurality of longitudinal members are disposed in parallel with each other;

FIG. 7 is a schematic enlarged view of a portion B in FIG. 2;

FIG. 8 is a schematic cross sectional view of a screen when the paper making screen plate of the embodiment of the present invention is applied to a type of the screen which is different from that shown in FIG. 1;

FIG. 9 to FIG. 11 are views showing the case that the paper making screen plate of the embodiment of the present invention is applied to a type of the

screen which is different from that of the screen shown in FIG. 8, wherein;

FIG. 9 is a schematic cross sectional view of the screen;

FIG. 10 is a schematic plan view of the screen plate of FIG. 9;

FIG. 11 is a schematic perspective view of a screen plate of FIG. 10;

FIG. 12 is a view explaining a modification of the shape of the slits of the screen plate and shows the state that longitudinal members are separately disposed;

FIG. 13 is a view explaining the state that the longitudinal members shown in FIG. 12 are abutted to each other;

FIG. 14 is a schematic cross sectional view taken along the line C - C of FIG. 13;

FIG. 15 is a view explaining another example of the shape of the slits of the screen plate and shows the state that longitudinal members are separately disposed;

FIG. 16 is a view explaining the state that the longitudinal members shown in FIG. 15 are abutted against each other;

FIG. 17 is a schematic cross sectional view taken along the line D - D of FIG. 16;

FIG. 18 is a view explaining a modification of the longitudinal members shown in FIG. 6 and shows that a first longitudinal member is disposed by being spaced apart from a second longitudinal member; FIG. 19 is a view explaining the state that the first longitudinal member shown in FIG. 18 is abutted against the second longitudinal member shown there;

FIG. 20 is a view explaining a modification of the longitudinal members shown in FIG. 18 and shows that the first longitudinal member is disposed by being spaced apart from the second longitudinal member;

FIG. 21 is a view explaining the state that the first longitudinal member shown in FIG. 20 is abutted against the second longitudinal member shown there; and

FIG. 22 is a view explaining the case that a screen plate is manufactured by fixing longitudinal members each other without using support members.

DESCRIPTION OF PREFERRED EMBODIMENTS

[0012] An embodiment of the present invention will be described with reference to the drawings. In FIG. 1 to FIG. 7, numeral 1 denotes a paper making screen which is referred to as an inward flow screen for, for example, causing a material to flow from the outside of a screen plate 10 toward the inside thereof to refine the material. The paper making screen is partitioned to a primary

chamber 4 and a secondary chamber 5 by the screen plate 10 disposed in a casing 2.

[0013] The primary chamber 4 is provided with a stirring member 6 and communicates with a material inlet 7 and a foreign substance outlet 8.

[0014] The secondary chamber 5 communicates with a material outlet 9 for discharging a refined material from which foreign substances are removed by the screen plate 10.

[0015] The screen plate 10 is arranged such that a plurality of longitudinal members 11 are disposed in parallel with each other and the ends on one side of the longitudinal members 11 are fixed to a support member 12 and the ends on the other side of longitudinal members 11 are fixed to a second support member 13, respectively by welding or the like.

[0016] Each of the longitudinal members 11 is made of stainless steel (or iron) having a circular cross section and a diameter of 1, for example, about 2.5 mm - about 6.0 mm, and recesses a and projections b are continuously formed on the longitudinal member 11 in the longitudinal direction thereof with at least two pieces of the recesses a. Note, the cross section of the recesses of the longitudinal member 11 is not limited to the circle but it may be formed to any polygon such as, for example, a rectangle, square, rhombus or the like.

[0017] As shown in FIG. 6, a slit 21 formed by that one of the longitudinal members 11 comes into contact another longitudinal member 11 is determined by a type of the material to be refined by the paper making screen 1, foreign substances contained in the material, and the like and set to about 0.05 mm to about 0.50 mm.

[0018] A method of continuously forming the recesses a and the projections b on the surface of the longitudinal member 11 in the longitudinal direction thereof includes, for example, an electropolishing method (the recesses a are formed in such a manner that the longitudinal member 11 is dipped into an acid solution with a tape applied to the portions which are not desired to be melted (the projections b) and a current is supplied thereto to electro-chemically polish the surface of the longitudinal member 11), a cutting method, a plating method, a metal deposition method and the like.

[0019] As shown in FIG. 6, a plurality of the longitudinal members 11 are disposed in parallel with each other so that the recesses a of each of the longitudinal members 11 are caused to confront the recesses a of each of the longitudinal members 11 and the projections b of each of the longitudinal members 11 are abutted against the projections b of each of the longitudinal members 11. Note, the ends on one side of the longitudinal members 11 are fixed to the first support member 12 and the ends on the other side of the longitudinal members 11 are fixed to the second support member 13, respectively by welding or the like (refer to FIG. 2).

[0020] As shown in FIG. 4, the first support member 12 and the second support member 13 are formed to an annular shape, and grooves 12a, 13a are formed to the

outside of the annular portions of the first support member 12 and the second support member 13 as shown in FIG. 5 so that they have a shape which conforms to the end shape of the longitudinal member 11 to easily positioning it.

[0021] Support members are suitably disposed between the first support member 12 and the second support member 13 depending upon the length of the longitudinal member 11, and in this embodiment a third support member 131 and a fourth support member 14 are disposed (note, the longitudinal members 11 are fixed to the third support member 131 and the fourth support member 14 by welding or the like).

[0022] Note, the upper portion of the screen plate 10 is closed by, for example, a roof plate 15 and the stirring member 6 is connected to a shaft 17 to be rotated by a belt 16. Note, numeral 18 denotes a bearing.

[0023] Consequently, to make the screen plate 10 having gaps of the slit 2t, about 250 to 300 pieces of the longitudinal members 11 each having the recesses a and the projections b continuously formed on the surface thereof (a difference of height t is provided between the recess a and the projection b) with at least two pieces of the projections b are prepared, a plurality of the longitudinal members 11 are disposed in parallel with each other so that the recesses a of each of the longitudinal members 11 are sequentially caused to confront the recesses a of each of the longitudinal members 11 and the projections b of each of the longitudinal members 11 are sequentially abutted against the projections b of each of the longitudinal members 11, and the ends on the both sides of the longitudinal members 11 are locked to the grooves 12a, 13a, respectively and fixed thereto by welding or the like.

[0024] Note, although the aforesaid embodiment is referred to as the inward flow screen by which a material is flown from the outside of the screen plate 10 toward the inside thereof and refined, the present invention is not limited to this type of the screen but similarly applicable to the one referred to as an outward flow screen 1 as shown in FIG. 8 by which a material is flown from the inside of the screen plate 10 toward the outside thereof and refined.

[0025] The aforesaid roof plate 15 need not be provided with the screen plate 10 when the outward flow screen 1 is employed. Note, numeral 19 denotes a motor for rotating the stirring member 6 connected to the shaft 17.

[0026] Further, although the screen plate 10 of the aforesaid embodiment is formed to a cylindrical shape, the present invention is not limited thereto but similarly applicable to a flat screen plate 101 as shown in FIG. 9 to FIG. 11.

[0027] The flat screen plate 101 shown in FIG. 9 to FIG. 11 is arranged similarly to the screen plate shown FIG. 1 to FIG. 7 such that a plurality of longitudinal members 11 are disposed in parallel with each other so that the recesses a of each of the longitudinal members 11

are caused to confront the recesses a of each of the longitudinal members 11 and the projections b of each of the longitudinal members 11 are abutted against the projections b of each of the longitudinal members 11.

5 [0028] The ends on one side of the longitudinal members 11 are fixed to a first support member 12 and the ends on the other side of the longitudinal members 11 are fixed to a second support member 13, respectively by welding or the like. The first support member 12 and the second support member 13 are composed of an integrally formed frame 20.

10 [0029] Note, although the slit of the screen plate 10 of the aforesaid embodiment is formed to a rectangular shape, the slit of the present invention is not limited thereto but may be formed to, for example, a circular shape in such a manner that the cross section of the recess a is formed to a semicircle and the cross section of the projection b is formed to a shape surrounded by two semicircles as shown in FIG. 12 to FIG. 14.

15 [0030] As shown in FIG. 15 to FIG. 17, the slit may be formed to a polygon composed of a hexagon in such a manner that the cross section of the recess a is formed to a trapezoid and the cross section of the projection b is formed to a shape surrounded by two trapezoids.

20 [0031] Although the screen plate 10 of the aforesaid embodiment is arranged such that a plurality of the longitudinal members 11 are disposed in parallel with each other so that the recesses a of each of the longitudinal members 11 are caused to confront the recesses a of each of the longitudinal member 11 and the projections b of each of the longitudinal members 11 are abutted against the projections b of each of the longitudinal members 11, the present invention is not limited to this arrangement but may be arranged such that, for example, there are prepared a plurality of first longitudinal member 11 each having recesses a and projections b continuously formed on the surface thereof with at least two pieces of the projections b and a plurality of second longitudinal members 111 each having a uniform surface without recesses and projections formed thereon as shown in FIG. 18, the first longitudinal members 11 and the second longitudinal members 111 are disposed in parallel with each other so that the projections b of each of the first longitudinal members 11 are abutted

25 [0032] 40 45 50 against the surface of each of the second longitudinal members 111 and the recesses a of each of the first longitudinal members 11 are caused to confront the surface of each of the longitudinal members 111 as shown in FIG. 19 and further the plurality of the first longitudinal members 11 and the plurality of the second longitudinal members 111 are alternately disposed.

30 [0033] Note, although not shown, the ends on one side of the plurality of the first and second longitudinal members 11, 111 disposed in parallel with each other are fixed to a first support member (not shown) similarly to the aforesaid embodiment and the ends on the other side of the plurality of the first and second longitudinal members 11, 111 disposed in parallel with each other

are fixed to a second support member (not shown). As a result, slits t are formed between the first longitudinal members 11 and the second longitudinal members 111 (refer to FIG. 19).

[0032] Further, there are prepared a plurality of first longitudinal members 11 each having recesses a and projections b continuously formed on the surface thereof with at least two pieces of the projections b and a plurality of second longitudinal members 1111 each having recesses a and projections b continuously formed on the surface thereof with at least two pieces of the projections b as shown in FIG. 20, the first longitudinal members 11 and the second longitudinal members 1111 are disposed in parallel with each other so that the projections b of each of the first longitudinal members 11 are abutted against the recesses a of each of the second longitudinal members 1111 and the projections b of the second longitudinal members 1111 are abutted against the recesses a of the first longitudinal members 11, respectively and the recesses a of each of the first longitudinal members 11 are caused to confront the recesses a of each of the longitudinal members 111 as shown in FIG. 21 and further the first and second longitudinal members 11, 1111 are alternately disposed.

[0033] Note, although not shown, the ends on one side of the plurality of the first longitudinal members 11 and the plurality of the second longitudinal members 1111 disposed in parallel with each other are fixed to a first support member (not shown) and the ends on the other side of the plurality of the first longitudinal members 11 and the plurality of the second longitudinal members 1111 disposed in parallel with each other are fixed to a second support member (not shown). As a result, slits t are formed between the first longitudinal members 11 and the second longitudinal members 1111 (refer to FIG. 21).

[0034] The screen plate 10 of the aforesaid embodiment is provided with the first support member 12 and the second support member 13, the embodiment is not limited thereto but it is possible, for example, that the longitudinal members 11 are fixed each other and the support members such as the first support member 12, the second support member and the like are omitted as shown in FIG. 22.

[0035] That is, it is possible that a plurality of longitudinal members 11 each having recesses a and projections b continuously formed on the surface thereof with at least two pieces of the projections b are disposed in parallel with each other so that the recesses a of each of the longitudinal members 11 are caused to confront the recesses a of each of the longitudinal members 11 and the projections b of each of the longitudinal members 11 are abutted against the projections b of each of the longitudinal members 11 and the longitudinal members 11 are fixed each other by welding or the like.

[0036] Likewise, it is possible that the first longitudinal members 11 shown in FIG. 18 and FIG. 19 are fixed to the second longitudinal members 111 shown there or the

first longitudinal members 11 shown in FIG. 20 and FIG. 21 are fixed to the second longitudinal members 1111 shown there and support members such as not shown first and second support members are omitted.

5 [0037] Note, according to this embodiment, when the sizes of the recesses a and projections b of the longitudinal members 11 (or the first longitudinal members 11 shown in FIG. 18 or the first and second longitudinal members 11, 1111 shown in FIG. 20) are set to predetermined values and each of the longitudinal members 11 is abutted against each of the longitudinal members 11 (or, each of the first longitudinal members 11 shown in FIG. 18 is abutted against each of the second longitudinal members 111 shown there or each of the first longitudinal members 11 shown in FIG. 20 is abutted against each of the second longitudinal members 111 shown there), slits each having a predetermined size can be accurately and easily formed between the longitudinal members 11 (or between the first longitudinal members 11 shown in FIG. 18 and the second longitudinal members 111 shown there or between the first longitudinal members 11 shown in FIG. 20 and the second longitudinal members 1111 shown there), and accordingly the screen plates 10, 101 which can be easily manufactured can be obtained.

Claims

30 1. A method of manufacturing a paper making screen plate, comprising the steps of:

35 preparing a plurality of longitudinal members (11) each having recesses (a) and projections (b) continuously formed on the surface thereof with at least two pieces of the projections (b); disposing the plurality of said longitudinal members (11) in parallel with each other; fixing said longitudinal members (11) to each other; and forming slits between said longitudinal members (11);

40 characterized in that said projections (b) are formed as circular projections in cross-section.

45 2. The method of claim 1, comprising the step of disposing the plurality of said longitudinal members so that the recesses (a) of each of said longitudinal members (11) are caused to confront the recesses (a) of each of said longitudinal members (11) and the projections (b) of each of said longitudinal members (11) are abutted against the projections (b) of each of said longitudinal members (11).

50 3. The method of claim 1 comprising the steps of:

55 preparing a plurality of first longitudinal mem-

- bers (11) each having recesses (a) and projections (b) continuously formed on the surface thereof with at least two pieces of the projections (b);
 preparing a plurality of second longitudinal members (1111) each having recesses (a) and projections (b) continuously formed on the surface thereof with at least two pieces of the projections (b);
 disposing said first longitudinal members (11) and said second longitudinal members (1111) so that the projections (b) of each of said first longitudinal members (11) are abutted against the recesses (a) of each of said second longitudinal members (1111) and the projections (b) of each of said second longitudinal members (1111) are abutted against the recesses (a) of each of said first longitudinal members (11), respectively and the recesses (a) of each of said first longitudinal members (11) are caused to confront the recesses (a) of each of said second longitudinal members (1111) and further alternately disposing the plurality of said first longitudinal members (11) and the plurality of said second longitudinal members (1111);
 fixing said first longitudinal members (11) to said second longitudinal members (1111); and forming slits between said first longitudinal members (11) and said second longitudinal members (1111). 40
4. The method of claim 1, comprising the steps of:
 preparing a plurality of first longitudinal members (11) each having recesses (a) and projections (b) continuously formed on the surface thereof with at least two pieces of the projections (b);
 preparing a plurality of second longitudinal members (1111) each having a uniform surface without recesses and projections formed thereon;
 disposing said first longitudinal members (11) and said second longitudinal members (1111) so that the projections (b) of each of said first longitudinal members (11) are abutted against the surface of each of said second longitudinal members (1111) and the recesses (a) of each of said first longitudinal members (11) are caused to confront the surface of each of said second longitudinal members (1111);
 alternately disposing the plurality of said first longitudinal members (11) and the plurality of said second longitudinal members (1111);
 fixing said first longitudinal members (11) to said second longitudinal members (1111); and forming slits between said first longitudinal members (11) and said second longitudinal members (1111). 45
5. The method of claim 2, comprising the steps of:
 fixing the ends on one side of the plurality of said longitudinal members (11) disposed in parallel with each other to a first support member (12);
 fixing the ends on the other side of the plurality of said longitudinal members (11) disposed in parallel with each other to a second support member (13). 50
6. The method of claim 3, comprising the steps of:
 fixing the ends on one side of the plurality of said first longitudinal members (11) and the plurality of said second longitudinal members (1111) to a first support member (12);
 fixing the ends on the other side of the plurality of said first longitudinal members (11) and the plurality of said second longitudinal members (1111) to a second support member (13). 55
7. The method of claim 4, comprising the steps of:
 fixing the ends of one side of the plurality of said first longitudinal members (11) and the plurality of said second longitudinal members (1111) to a first support member (12);
 fixing the ends on the other side of the plurality of said first longitudinal members (11) and the plurality of said second longitudinal members (1111) to a second support member (13). 60
8. The method of claim 1, comprising the steps of:
 fixing the ends on one side of the plurality of said longitudinal members (11) disposed in parallel with each other to a first support member (12);
 fixing the ends on the other side of the plurality of said longitudinal members (11) disposed in parallel with each other to a second support member (13). 65

Patentansprüche

- 50 1. Verfahren zur Herstellung eines Siebes für die Papierherstellung mit den folgenden Schritten:
 - Herstellung mehrerer Längsbauteile (11), von denen jedes Ausnehmungen (a) und Vorsprünge (b) aufweist, die kontinuierlich auf seiner Oberfläche ausgebildet sind, wobei mindestens zwei Stück Vorsprünge (b) vorhanden sind;

- Anordnen der Vielzahl der Längsbauteile (11) parallel zueinander;
 - Fixieren der Längsbauteile (11) aneinander; und
 - Ausbilden von Schlitten zwischen den Längsbauteilen (11);
- dadurch gekennzeichnet, dass
- die Vorsprünge (b) als im Querschnitt kreisförmige Vorsprünge ausgebildet sind.
2. Verfahren nach Anspruch 1, das den folgenden Schritt aufweist:
- Anordnen der Vielzahl der Längsbauteile auf eine solche Weise, dass die Ausnehmungen (a) eines jeden der Längsbauteile (11) den Ausnehmungen (a) eines jeden der Längsbauteile (11) gegenüberstehen und die Vorsprünge (b) eines jeden der Längsbauteile (11) gegen die Vorsprünge (b) eines jeden der Längsbauteile (11) stoßen.
3. Verfahren nach Anspruch 1 mit den folgenden Schritten:
- Herstellen mehrerer erster Längsbauteile (11), die jeweils Ausnehmungen (a) und Vorsprünge (b) haben, die kontinuierlich an ihrer Oberfläche ausgebildet sind, wobei mindestens zwei Stück der Vorsprünge (b) vorhanden sind;
 - Herstellen mehrerer zweiter Längsbauteile (1111), die jeweils Ausnehmungen (a) und Vorsprünge (b) haben, die kontinuierlich auf ihrer Oberfläche ausgebildet sind, wobei mindestens zwei Stück der Vorsprünge (b) vorhanden sind;
 - Anordnen der ersten Längsbauteile (11) und der zweiten Längsbauteile (1111) so, dass jeweils die Vorsprünge (b) eines jeden der ersten Längsbauteile (11) gegen die Ausnehmung (a) eines jeden der zweiten Längsbauteile (1111) stoßen und die Vorsprünge (b) eines jeden der zweiten Längsbauteile (1111) gegen die Ausnehmungen (a) eines jeden der ersten Längsbauteile (11) stoßen, und die Ausnehmungen (a) eines jeden der ersten Längsbauteile (11) den Ausnehmungen (a) eines jeden der zweiten Längsbauteile (1111) gegenüberstehen, wobei ferner die Vielzahl der ersten Längsbauteile (11) und die Vielzahl der zweiten Längsbauteile (1111) abwechselnd angeordnet werden;
 - Fixieren der ersten Längsbauteile (11) an den zweiten Längsbauteilen (1111); und
 - Ausbilden von Schlitten zwischen den ersten Längsbauteilen (11) und den zweiten Längsbauteilen (1111).
4. Verfahren nach Anspruch 1 mit den folgenden Schritten:
- Herstellen mehrerer erster Längsbauteile (11), von denen jedes Ausnehmungen (a) und Vorsprünge (b) hat, die kontinuierlich auf seiner Oberfläche ausgebildet sind, wobei mindestens zwei Stück der Vorsprünge (b) vorhanden sind;
 - Herstellen mehrerer zweiter Längsbauteile (1111), von denen jedes eine einheitliche Oberfläche ohne darauf ausgebildete Ausnehmungen oder Vorsprünge aufweist;
 - Anordnen der ersten Längsbauteile (11) und der zweiten Längsbauteile (1111) auf eine solche Weise, dass die Vorsprünge (b) eines jeder der ersten Längsbauteile (11) gegen die Oberfläche eines jeden der zweiten Längsbauteile (1111) stossen und die Ausnehmungen (a) eines jeden der ersten Längsbauteile (11) der Oberfläche eines jeden der zweiten Längsbauteile (1111) gegenüberstehen;
 - abwechselndes Anordnen der Vielzahl der ersten Längsbauteile (11) und der Vielzahl der zweiten Längsbauteile (1111);
 - Fixieren der ersten Längsbauteile (11) an den zweiten Längsbauteilen (1111); und
 - Ausbilden von Schlitten zwischen den ersten Längsbauteilen (11) und den zweiten Längsbauteilen (1111).
5. Verfahren nach Anspruch 2 mit den folgenden Schritten:
- Befestigen der Enden an einer Seite der Vielzahl der Längsbauteile (11), die parallel zueinander angeordnet sind, an einem ersten Trägerbauteil (12);
 - Befestigen der Enden an der anderen Seite der Vielzahl der Längsbauteile (11), die parallel zueinander angeordnet sind, an einem ersten Trägerbauteil (13).
6. Verfahren nach Anspruch 3 mit den folgenden Schritten:
- Befestigen der Enden an einer Seite der Vielzahl der ersten Längsbauteile (11) und der Vielzahl der zweiten Längsbauteile (1111) an einem ersten Trägerbauteil (12);
 - Befestigen der Enden an der anderen Seite der Vielzahl der ersten Längsbauteile (11) und der Vielzahl der zweiten Längsbauteile an einem zweiten Trägerbauteil (13).
7. Verfahren nach Anspruch 4 mit den folgenden

Schritten:

- Befestigen der Enden an einer Seite der Vielzahl der ersten Längsbauteile (11) und der Vielzahl der zweiten Längsbauteile (1111) an einem ersten Trägerbauteil (12); 5
- Befestigen der Enden an der anderen Seite der Vielzahl der ersten Längsbauteile (11) und der Vielzahl der zweiten Längsbauteile (1111) an einem zweiten Trägerbauteil (13). 10

8. Verfahren nach Anspruch 1 mit den folgenden Schritten:

- Befestigen der Enden an einer Seite der Vielzahl der Längsbauteile (11), die parallel zueinander angeordnet sind, an einem ersten Trägerbauteil (12); 15
- Befestigen der Enden an der anderen Seite der Vielzahl der Längsbauteile (11), die parallel zueinander angeordnet sind, an einem zweiten Trägerbauteil (13). 20

Revendications

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1. Procédé pour fabriquer une plaque de tamis de fabrication de papier, comprenant les étapes consistant à :

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préparer une pluralité d'éléments longitudinaux (11) comportant chacun des cavités (a) et des saillies (b) formées de façon continue sur la surface de ceux-ci avec au moins deux pièces des saillies (b) ;

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disposer la pluralité desdits éléments longitudinaux (11) parallèlement les uns aux autres ; fixer lesdits éléments longitudinaux (11) les uns aux autres ; et

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former des fentes entre lesdits éléments longitudinaux (11) ;

caractérisé en ce que lesdites saillies (b) sont formées sous la forme de saillies de section transversale circulaire. 45

2. Procédé selon la revendication 1, comprenant l'étape consistant à disposer la pluralité desdits éléments longitudinaux de telle sorte que les cavités (a) de chacun desdits éléments longitudinaux (11) soient amenées à venir en vis-à-vis avec les cavités (a) de chacun desdits éléments longitudinaux (11), et que les saillies (b) de chacun desdits éléments longitudinaux (11) butent contre les saillies (b) de chacun desdits éléments longitudinaux (11). 50

3. Procédé selon la revendication 1, comprenant les étapes consistant à :

préparer une pluralité de premiers éléments longitudinaux (11) comportant chacun des cavités (a) et des saillies (b) formées de façon continue sur la surface de ceux-ci avec au moins deux pièces des saillies (b) ;

préparer une pluralité de deuxièmes éléments longitudinaux (1111) comportant chacun des cavités (a) et des saillies (b) formées de façon continue sur la surface de ceux-ci avec au moins deux pièces des saillies (b) ;

disposer lesdits premiers éléments longitudinaux (11) et desdits deuxièmes éléments longitudinaux (1111) de telle sorte que les saillies (b) de chacun desdits premiers éléments longitudinaux (11) butent contre les cavités (a) de chacun desdits deuxièmes éléments longitudinaux (1111), et que les saillies (b) de chacun desdits deuxièmes éléments longitudinaux (1111) butent contre les cavités (a) de chacun desdits premiers éléments longitudinaux (11), respectivement, et que les cavités (a) de chacun desdits premiers éléments longitudinaux (11) soient amenées à venir en vis-à-vis des cavités (a) de chacun desdits deuxièmes éléments longitudinaux (1111), et, également, disposer en alternance la pluralité desdits premiers éléments longitudinaux (11) et la pluralité desdits deuxièmes éléments longitudinaux (1111) ;

fixer lesdits premiers éléments longitudinaux (11) auxdits deuxièmes éléments longitudinaux (1111) ; et

former des fentes entre lesdits premiers éléments longitudinaux (11) et lesdits deuxièmes éléments longitudinaux (1111).

4. Procédé selon la revendication 1, comprenant les étapes consistant à :

préparer une pluralité de premiers éléments longitudinaux (11) comportant chacun des cavités (a) et des saillies (b) formées de façon continue sur la surface de ceux-ci avec au moins deux pièces des saillies (b) ;

préparer une pluralité de deuxièmes éléments longitudinaux (1111) ayant chacun une surface uniforme sans cavités et sans saillies formées sur celle-ci ;

disposer lesdits premiers éléments longitudinaux (11) et lesdits deuxièmes éléments longitudinaux (1111) de telle sorte que les saillies (b) de chacun desdits premiers éléments longitudinaux (11) butent contre la surface de chacun desdits deuxièmes éléments longitudinaux (1111) et que les cavités (a) de chacun desdits premiers éléments longitudinaux (11) soient amenées à venir en vis-à-vis de la surface de chacun desdits deuxièmes éléments longitudinaux (1111) ;

- naux (1111) ;
disposer en alternance la pluralité desdits premiers éléments longitudinaux (11) et la pluralité desdits deuxièmes éléments longitudinaux (1111) ;
fixer lesdits premiers éléments longitudinaux (11) auxdits deuxièmes éléments longitudinaux (1111) ; et
former des fentes entre lesdits premiers éléments longitudinaux (11) et lesdits deuxièmes éléments longitudinaux (1111). 5
5. Procédé selon la revendication 2, comprenant les étapes consistant à : 15
- fixer des extrémités sur un côté de la pluralité desdits éléments longitudinaux (11) disposés parallèlement les uns aux autres à un premier élément de support (12) ;
fixer des extrémités sur l'autre côté de la pluralité desdits éléments longitudinaux (11) disposés parallèlement les uns aux autres à un deuxième élément de support (13). 20
6. Procédé selon la revendication 3, comprenant les étapes consistant à : 25
- fixer des extrémités sur un côté de la pluralité desdits premiers éléments longitudinaux (11) et de la pluralité desdits deuxièmes éléments longitudinaux (1111) à un premier élément de support (12) ;
fixer des extrémités sur l'autre côté de la pluralité desdits premiers éléments longitudinaux (11) et de la pluralité desdits deuxièmes éléments longitudinaux (1111) à un deuxième élément de support (13). 30 35
7. Procédé selon la revendication 4, comprenant les étapes consistant à : 40
- fixer des extrémités d'un côté de la pluralité desdits premiers éléments longitudinaux (11) et de la pluralité desdits deuxièmes éléments longitudinaux (1111) à un premier élément de support (12) ;
fixer des extrémités sur l'autre côté de la pluralité desdits premiers éléments longitudinaux (11) et de la pluralité desdits deuxièmes éléments longitudinaux (1111) à un deuxième élément de support (13). 45 50
8. Procédé selon la revendication 1, comprenant les étapes consistant à : 55
- fixer des extrémités sur un côté de la pluralité desdits éléments longitudinaux (11) disposés parallèlement les uns aux autres à un premier élément de support (12) ;
fixer des extrémités sur l'autre côté de la pluralité desdits éléments longitudinaux (11) disposés parallèlement les uns aux autres à un deuxième élément de support (13). 56

FIG.1

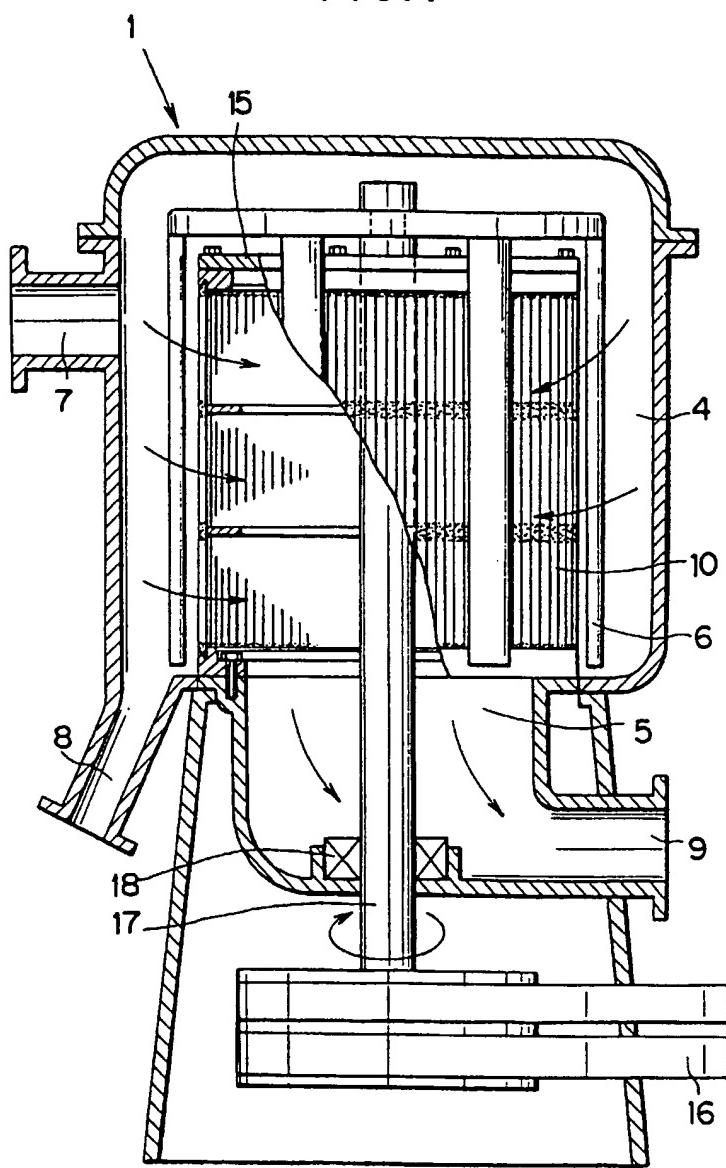


FIG.2

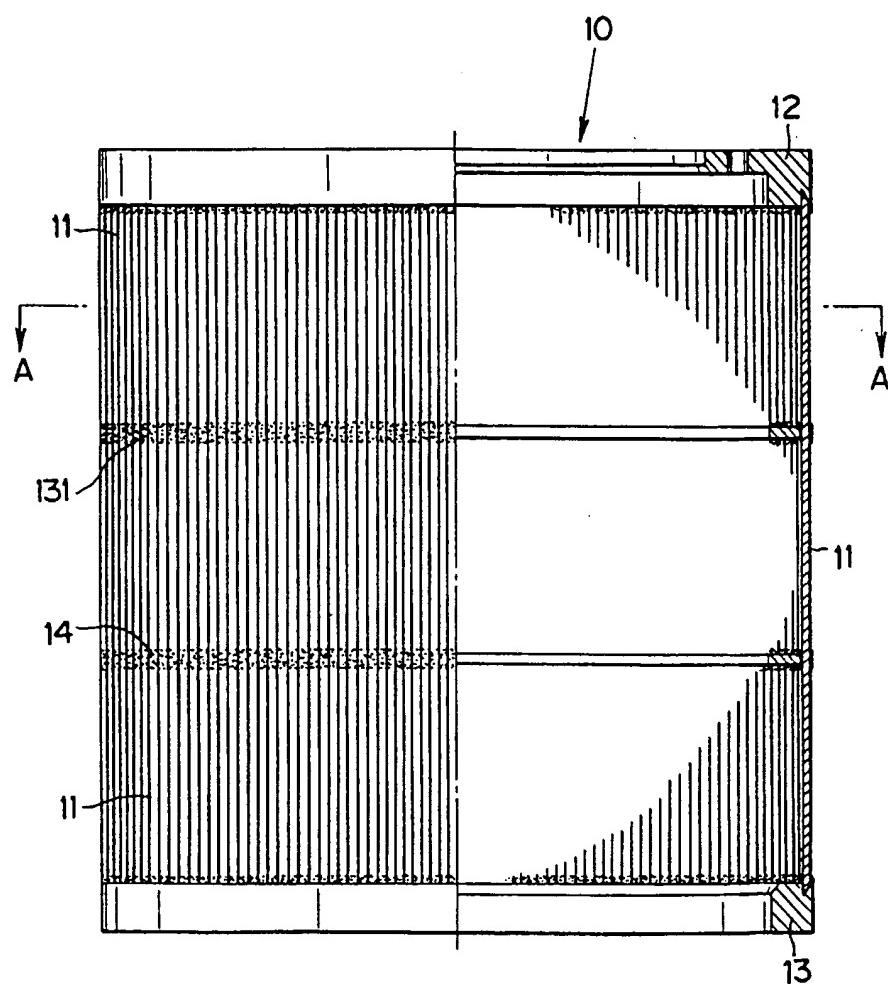


FIG.3

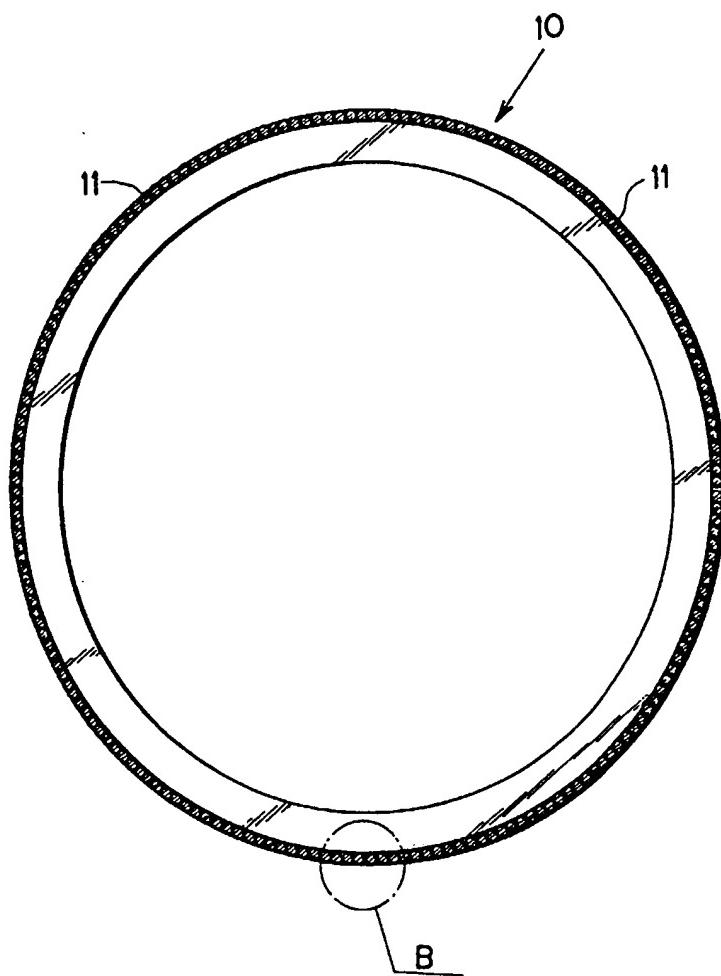


FIG.4

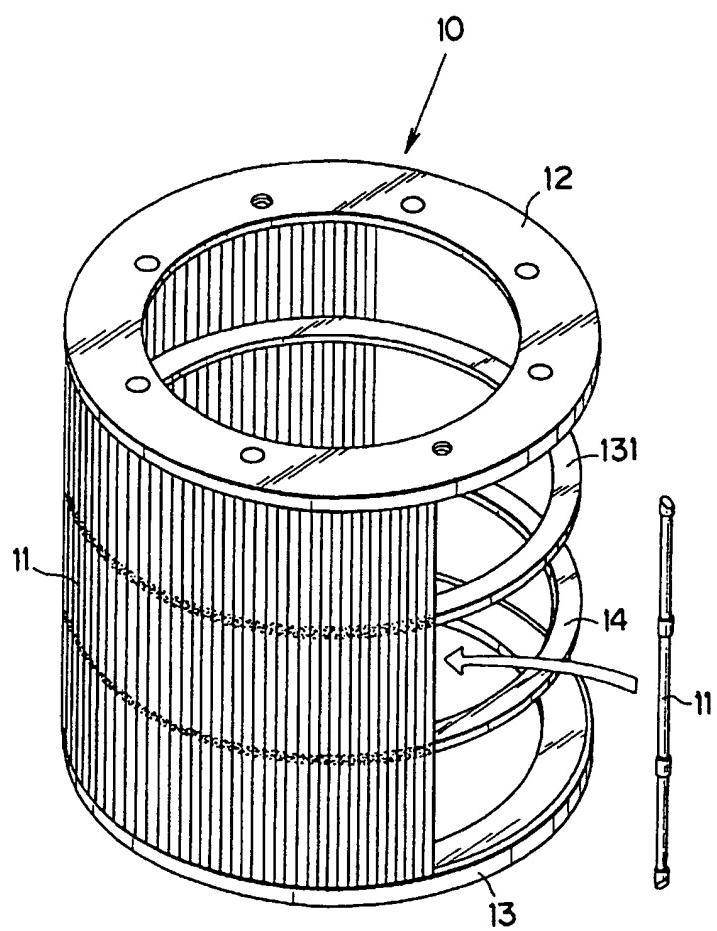


FIG.5

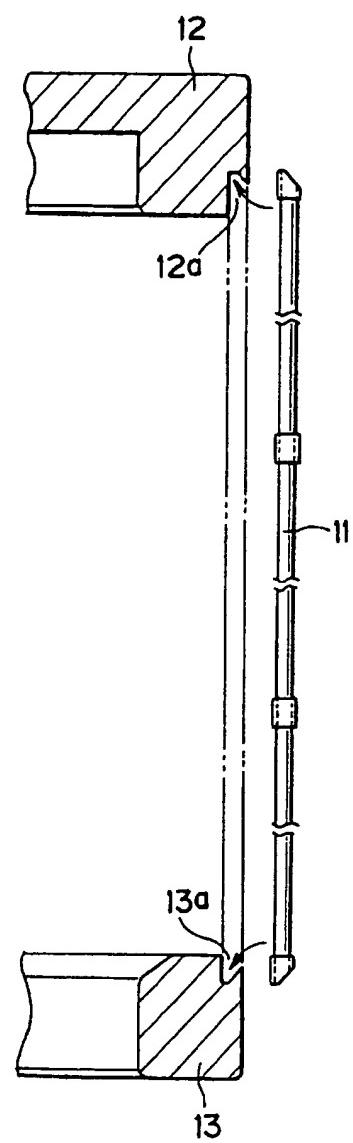


FIG.6

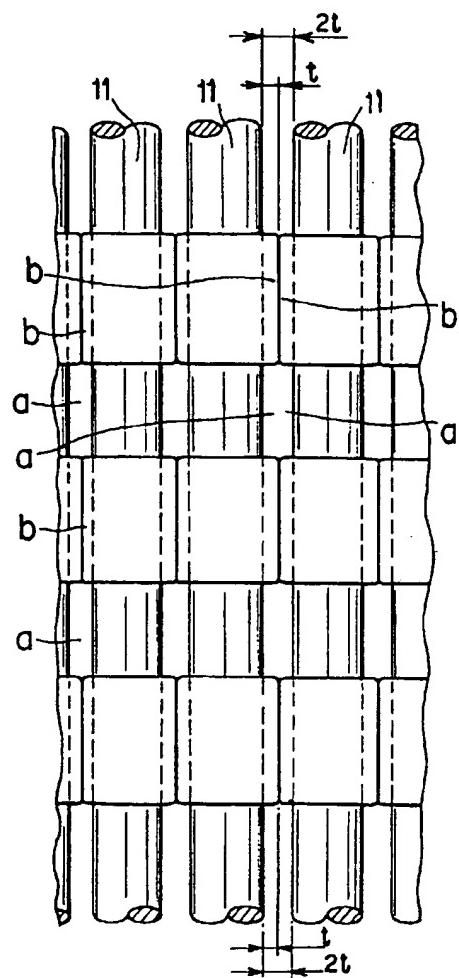


FIG.7

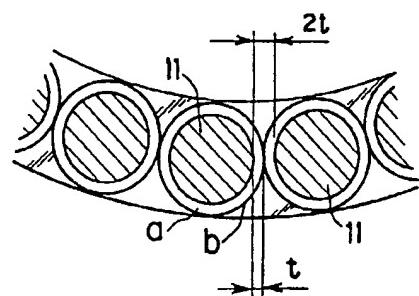


FIG.8

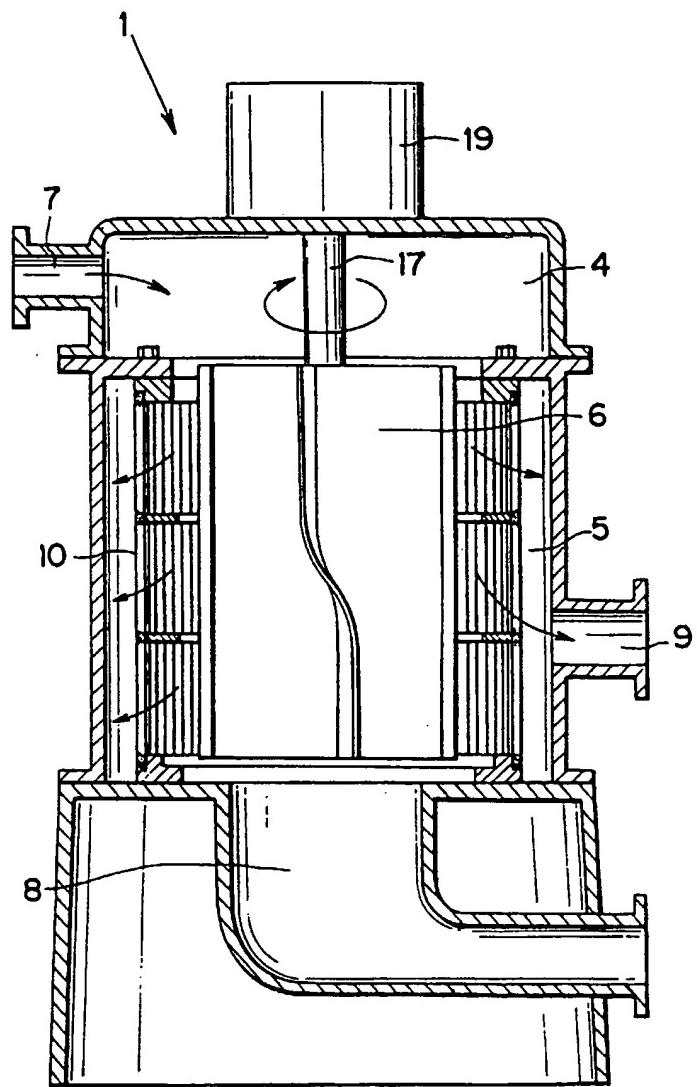


FIG.9

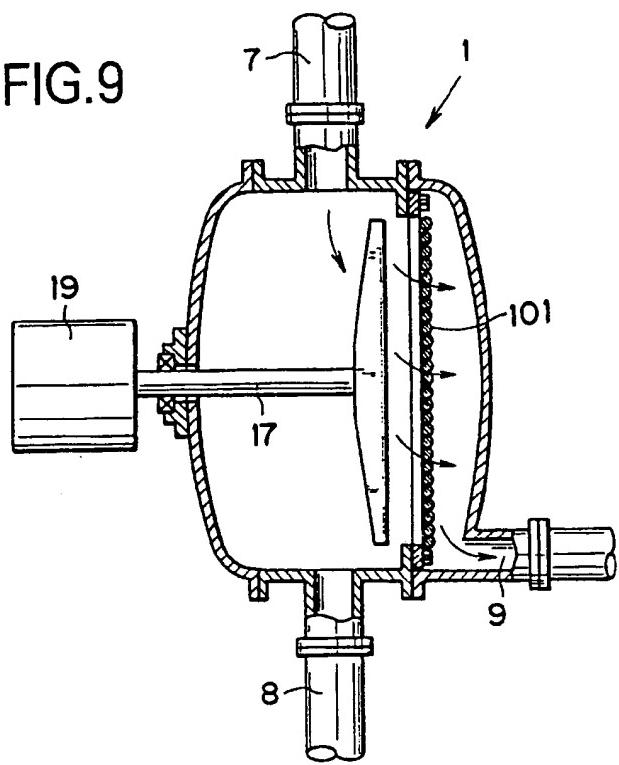


FIG.10

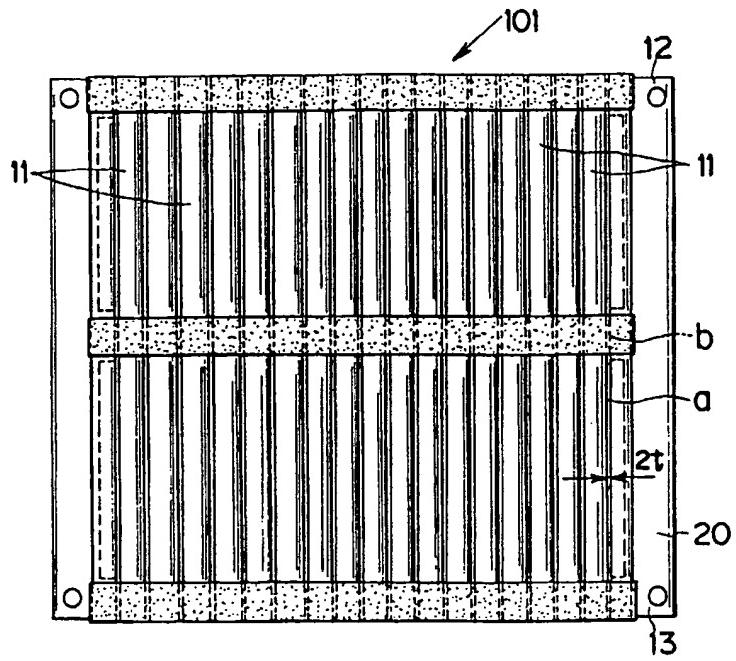


FIG.11

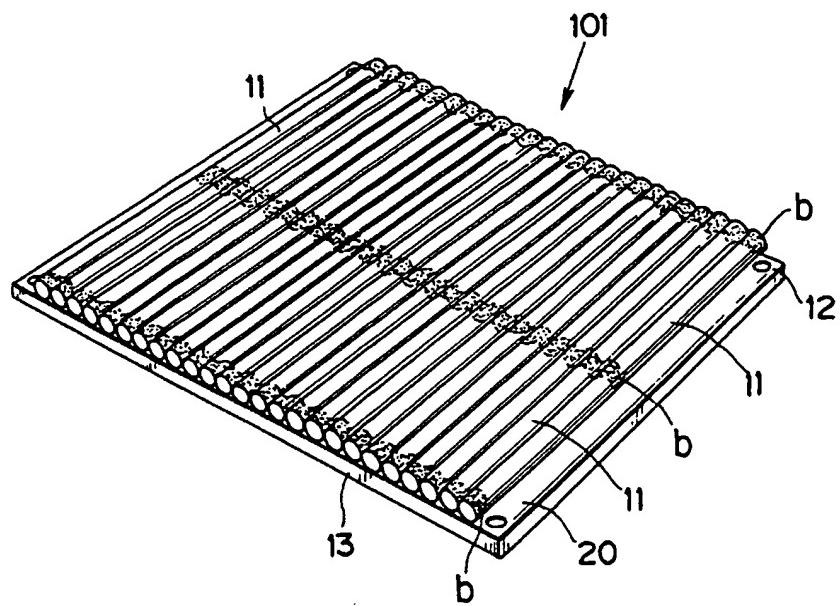


FIG.12

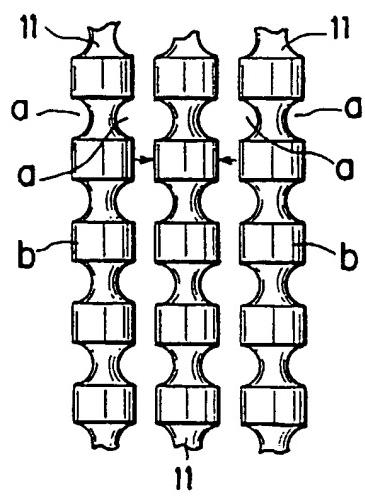


FIG.13

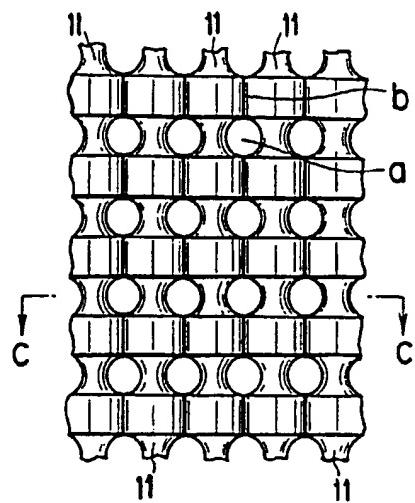


FIG.14

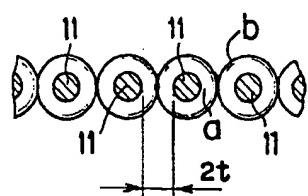


FIG.15

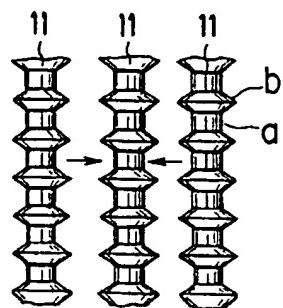


FIG.16

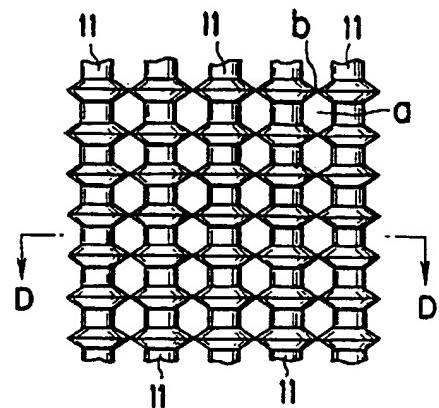


FIG.17

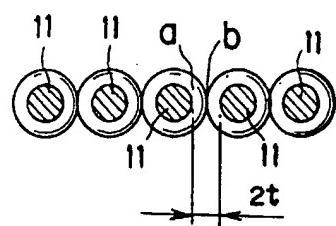


FIG.18

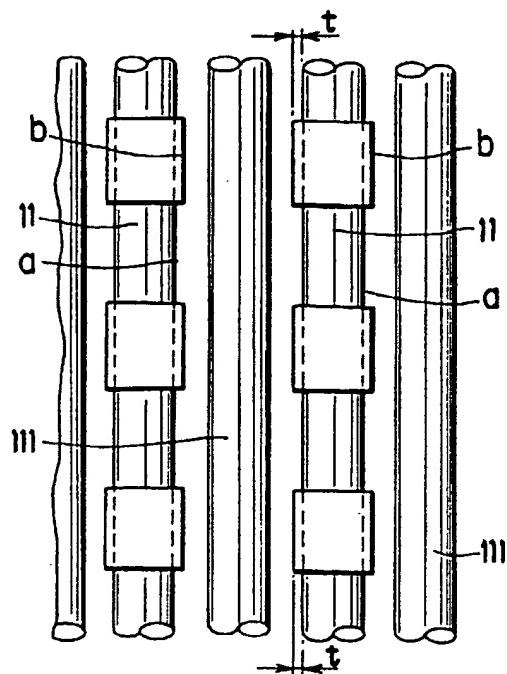


FIG.19

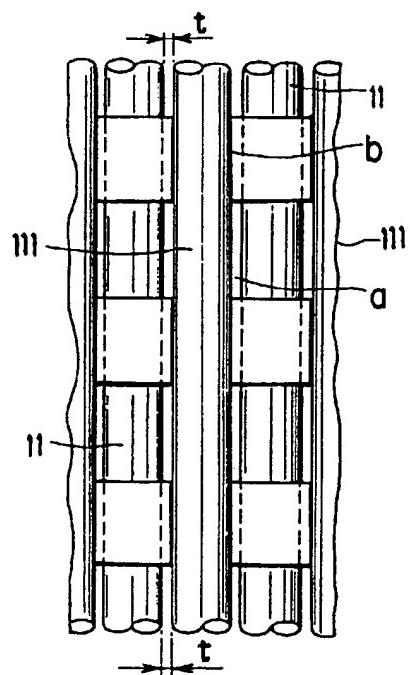


FIG.20

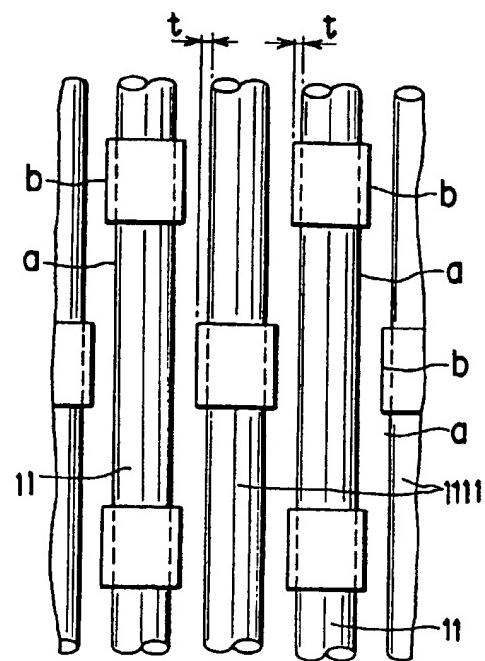


FIG.21

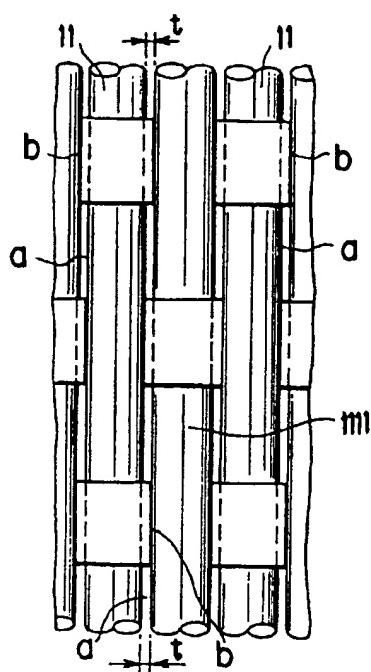


FIG.22

